

1845 METALLIC SHEATHING OF CABLES

C Wheatstone (UK)

The earliest attempts at metallic sheathing were made in 1845 by Wheatstone, who folded lead strip around the cable core and then joined it with a longitudinal soldered seam. This method bears an interesting similarity to a modern method in which aluminium sheathing is applied using pre-formed strip. The method was superseded by one which involved soldering 50 ft. lengths of lead pipe end to end and subsequently sinking the pipe into contact with the cable core by means of a die. This again has an interesting parallel in a present day method for aluminium sheathing.

In 1879 the first direct extrusion on to cable was made from a Borel press using solid hollow billets pre-heated to 120°C. It was not then considered good practice to recharge with molten lead because of possible thermal damage to the insulation, so the process was limited to a one billet charge. Development of lead sheathed cable has since gone hand in hand with the development of the lead extrusion process. Different types of press have been designed to overcome defects experienced with cable in service but extrusion in one form or another has been universally adopted. By contrast, the present development of aluminium sheathing processes is proceeding along three different lines and it is hard to predict which technique will ultimately prove most successful. The greater difficulty of extruding aluminium as compared with lead has undoubtedly favoured this more varied approach.

SOURCE: 'The metallic sheathing of cables' by A V Garner *AEI Engineering* p 248 (September/October 1962)